

## **SEPTEMBER 2002**

### **DATES TO REMEMBER**

Extension Hay Day/Row Crop Field Day.....	September 5, 2002
WFREC Jay	8:30 a.m.
NFREC Fall Field Day.....	September 26, 2002
	8:15 a.m.-1:00 p.m. Eastern Time
Whitetail Deer/Food Plot Management Meeting.....	September 26, 2002
Jay Community Center	6:30-8:30 p.m.
Santa Rosa County Fair.....	September 24-29, 2002
Industrial Park, Milton	

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## **SCOUT COTTON FOR STINK BUGS**

Fields should be scouted closely for stink bugs the remainder of the season. The threshold is 4 stink bugs per 100 sweeps using a sweep net or 1 per 6 row feet using a drop cloth. However, the most accurate method appears to be monitoring of medium sized bolls which are approximately 12 days of age (about the diameter of a quarter) for stink bug damage. Bolls of this age can be easily squashed in the palm of your hand. Slice bolls open and look for calloused areas on the inside of the boll wall, deteriorating areas inside the boll, or stained lint. The reason for slicing bolls is that not all bolls with outside damage will have internal damage. On the other hand, some bolls that have internal damage will show no evidence of damage on the outside.

Most states now recommend a threshold of 20 percent internal damage along with stink bugs observed in the field. Recommended insecticides for stink bugs include several pyrethroids, Bidrin, methyl parathion, and Orthene. Pyrethroids provide about 80% control of green and southern green stink bugs. However, control of brown stink bugs is less, about 50%. If brown stink bugs are the primary species infesting a field, the phosphates (Bidrin, methyl parathion, and Orthene) will provide better control. Once you spray for stink bugs, you should get about two-plus weeks of control. When scouting pay particular attention to field borders, especially next to peanut fields. Sometimes stinkbugs can be controlled by spraying just the border rows before they spread to the rest of the field.

## **TIMING COTTON DEFOLIATION**

It is generally safe to defoliate when 50 to 60 percent of the bolls are open and the youngest boll you expect to harvest is mature (generally 36 to 40 days old). Boll maturity is the single most important factor to consider in timing defoliant applications. To check boll maturity, cut it in cross section with a sharp knife. When mature it should be difficult to cut with a sharp knife and the seed will be completely filled out with no jelly in the center. The presence of a thin, brown line around the seed indicates the seed coat is reaching maturity and the boll is mature enough not to be adversely affected by application of a harvest-aid chemical.

Nodes Above Cracked Boll – Research has shown that maturity extends four nodes above the uppermost first position cracked boll (NACB). Therefore, when the first position cracked boll is within four nodes of the last boll you plan to harvest, the field can be defoliated.

Cut-out + DD 60's – Cutout generally occurs when the crop reaches the point of development where the first position white flower is within five nodes of the terminal. When 750 to 800 DD60's are accumulated after cutout, generally the field will be mature enough to defoliate. However, this may vary and fields should also be physically examined to determine maturity. (Note: To calculate DD60's for a day, take the average of the high and low temperatures for the day and subtract 60.)

## **HARVEST AID MATERIALS**

### **Defoliation Materials**

**Sodium chlorate** acts as a desiccant at higher rates of application, tending to stick leaves to the cotton plants. At normal rates it is usually not as effective as other defoliants. It is not a strong inhibitor of terminal regrowth, and it is not very effective on young, immature leaves. **Do Not** mix sodium chlorate with surfactants, oils, insecticides, other defoliants, or ethephon.

**Def 6 and Folex.** These phosphate-type materials have been the standard defoliants for a number of years. Their performance is essentially equal, and they provide effective, economical defoliation over a wide range of environmental conditions. Under cooler temperatures or less favorable plant conditions, the higher label rates tend to perform best. These materials are labeled for combination with Drop/Freefall 50WP or ethephon. When combinations are used, the lower rate of Def 6 or Folex seems to perform well. These materials are not good regrowth inhibitors and are more rain fast than are other materials. The use of surfactants and crop oil has enhanced the performance of these materials only under very adverse conditions.

**Ginstar (thidazuron plus diuron).** This combination product contains its own adjuvant system. It provides good defoliation and regrowth suppression over a wide range of environmental conditions. Low temperatures may require higher dosages and/or longer times for more complete defoliation. Response of the cotton plant to an application of Ginstar slows at temperatures below 60° F. Ideally, nighttime temperatures 2 to 3 days before and following application should be no less than 60° F or defoliation and/or regrowth inhibition can be reduced.

**Harvade 5F** has generally provided defoliation equivalent to that of the phosphate-type materials. Harvade is not a strong inhibitor of terminal regrowth. It seems to be less sensitive to low temperatures than other defoliants and performs better than other materials when average temperatures are below 70° F. It is essentially odorless and provides desiccation of morningglories in cotton. The addition of 1 pint per acre of crop oil is necessary for acceptable defoliation. Rainfall within 6 hours may reduce the effectiveness of Harvade.

**Dropp/Freefall 50 WP** provide defoliation for mature leaves that is essentially equal to that of the phosphate-type defoliants. These products can also provide excellent removal of juvenile growth and are strong inhibitors of terminal regrowth. Dropp and FreeFall act more slowly than the phosphate materials and are more sensitive to cool weather. When night temperatures fall below 60° F, less than desirable defoliation can result. Tank-mixing with Ginstar, methyl parathion, the phosphate defoliants, ethephon or ethephon-based products, or a recommended crop oil concentrate will enhance defoliant activity while maintaining adequate regrowth inhibition. Under warm to hot conditions, Dropp/Freefall are effective when used alone, at low label rates. Dropp and FreeFall require a 24-hour rain-free period. Refer to the label for mixing and clean-up instructions.

**Quick Pick (cacodylic acid).** Quick Pick can be used as a defoliant or desiccant depending on the rate applied. It has recently been marketed as a defoliant enhancement material at rates of 0.75 to 1.25 pints per acre. Caution should be used with this material under very hot ( $> 90^{\circ}\text{F}$ ) conditions.

**LeafLess.** LeafLess is a combination of dimethipin and thidazuron. It provides defoliation and regrowth control under good weather conditions.

**Aim 40DF.** This low-use rate product provides defoliation activity over a wide range of environmental conditions. To obtain regrowth control and boll opening Aim must be mixed with other harvest-aid materials. Its rates are 2/3 to 1.0 ounce per acre.

### **Boll-Opening Materials and Combination Materials**

**CottonQuick (ethephon plus tetraoxosulfate).** This is a combination product that provides boll opening and defoliation activity. Typically, satisfactory defoliation is achieved within 7 days. Regrowth control can be obtained by mixing CottonQuik with Dropp, FreeFall, or Ginstar. The addition of a defoliant such as Harvade, Dropp, FreeFall, or Ginstar may increase overall performance. Higher rates and/or mixtures should be used in cooler weather and on rank cotton.

**Ethephon (Prep, Super Boll, and several other trade names).** Ethephon stimulates boll opening by increasing the production of ethylene, which normally occurs at boll opening. Mature bolls will usually open 10 to 14 days after application. However, boll opening depends a great deal on application rate and temperature. Therefore, best results are obtained when ethephon is applied when nighttime temperatures are above  $60^{\circ}\text{F}$ . Day temperatures between  $65^{\circ}\text{F}$  and  $75^{\circ}\text{F}$  will require twice the rate of ethephon to produce the same speed and degree of boll opening as an application made at temperatures between  $85^{\circ}\text{F}$  and  $95^{\circ}\text{F}$ . The recommended rate for boll opening is 1 to 2 pounds of active ingredient per acre. The higher rate sometimes acts as a defoliant under optimum conditions. Use the lower rate in combination with other defoliants. Ethephon is compatible with Def, Folex, Dropp/Freefall, and Harvade. Do not mix ethephon with sodium chlorate.

**Finish (ethephon plus cyclanilide).** This is a combination product that provides boll opening and defoliation activity with moderate regrowth control. Additional regrowth control can be obtained by adding Dropp, FreeFall, or Ginstar to the spray mix. The addition of a phosphate defoliant (Def/Folex) will increase defoliation in cooler weather. Finish may shorten the time interval between application and harvest as compared to ethephon used alone. Activity against juvenile growth and terminal regrowth suppression is good under ideal conditions.

**Gramoxone Max/Boa** (paraquat) are labeled for desiccation and as a harvest aid. Gramoxone Max/Boa are also labeled for tank-mixing with Def, Folex, Dropp/Freefall, Harvade, or ethephon for defoliation and boll opening. Apply when a minimum of 80 percent of the bolls are open and the remaining bolls to be harvested are mature. At

low rates it has been used to open bolls by causing boll injury, which leads to boll cracking and opening.

### **Additives**

**Accelerate** can be added to Def 6 or Folex at 1.5 pints per acre to increase leaf drop by approximately 25 percent during the first few days of defoliant activity. This may allow an earlier application of ethephon to open bolls when early harvest is important. Because total leaf drop after 7 to 10 days has generally not been improved with Accelerate, the use of the defoliant alone may be preferred if early harvest is not important. The addition of ammonium sulfate at 2 pounds per acre plus crop oil concentrate at 1 pint per acre to Dropp/FreeFall and Def/Folex has resulted in better defoliation, especially under cool conditions.

**Roundup Ultra Max – Touchdown IQ or other glyphosate products if labeled** can be used in a tank-mix with various defoliants to achieve late-season control of weeds and to reduce populations of perennial grasses and vines. Consult labels for use rates. Read and follow all label instructions. Do not apply to crops grown for seed.

### **Desiccants**

**Cacodylic acid (Quick Pick), sodium chlorate, Gramoxone Max/Boa.** Desiccants are generally not used as harvest-aids for cotton harvested with spindle-type pickers. If desiccation is necessary because of regrowth or weeds, it is best to apply a defoliant, wait until leaf drop occurs, and then apply the desiccant. Desiccants can kill the entire plant and burn immature bolls. Therefore, 90 percent of the crop should be open before applying a desiccant. Plan to pick within 7 days to avoid possible bark contamination.

*Source: ANR-715 Cotton Defoliation, AL Coop. Ext., IS529 Cotton Defoliation, Miss. State Univ. Ext.*

### **TIME TO SAMPLE FOR NEMATODES**

This is the time of season that “weak” areas begin showing up in cotton fields across the county. Affected areas are often stunted, appear chlorotic, and perhaps “cut-out” prematurely. These symptoms may be caused by various factors including poor fertility. However, in many cases the symptoms are associated with nematode damage.

The best time to sample for nematodes is now or immediately following harvest. It is often useful to pull separate samples from both afflicted and healthy areas of the same field to compare the size of nematode populations. Later, during the onset of cold weather, nematode populations will drop substantially, making nematode analysis more difficult and less accurate. A nematode sample should be prepared from a mixture of 10 to 20 “cores” of soil. Collect cores 6 to 8 inches deep in a regular pattern over the area. Cores can be taken with a soil sampling tube, auger, or trowel. For best results, a sample should represent no more than 10 acres. Thoroughly mix the soil in a bucket

and pour about one pint into a plastic bag. Include as many fine "feeder" roots as possible mixed in with the soil sample. Seal the bag to prevent the soil from drying out.

Do not allow the sample to overheat or freeze before mailing. Remember, nematodes are living animals so soil samples must be handled carefully to have an accurate nematode analysis.

Nematode sample mailing kits for the Florida Nematode Assay Lab are available at our office. Cost per sample is \$12.00. The results and appropriate recommendations are mailed back within 10 working days. We also receive a copy of results so we can discuss them with you if you need assistance.

### **CLEAN SWEEP - UNWANTED PESTICIDE PROGRAM**

The Florida Department of Environmental Protection has received funding to continue the Clean Sweep Program for next year. The program will be conducted for an area or county on an as-needed basis, and will be conducted sometime after January 1, 2003. This program will be free to commercial pesticide users that have cancelled, suspended, or unusable pesticides. Conditional approval may be granted to governmental agencies and agriculture research labs. It will not be available to non-farm households or commercial chemical wholesale or retail outlets. They will not accept fertilizer, nutrients, gas cylinders, or other non-pesticide wastes.

To get the program in our area we have to show a need to the DEP this fall. Tony Gomillion, Environmental Control Director for Santa Rosa County, has asked the Extension office to develop a list of those who would like to participate. If you would like to participate, please provide us with the following: 1) location of material to be collected, 2) type of farm operation, 3) inventory and quantity of material, and 4) contact name and phone number. Get this information to us as soon as possible. Don't miss this opportunity to get rid of your unwanted pesticides for free.

### **PEANUT POD-BLASTER**

#### **Determining When To Dig**

The "hull scrape method" is based on the fact that, as the peanut pod passes through various stages of maturity, the color of the middle layer of the hull changes in a characteristic manner and at a predictable rate. The color changes progressively from white to yellow to orange to brown and finally black.

In using the "hull scrape method" the outer layer of the hull is scraped off, exposing the colored middle layer. A sample of pods are then placed on a "peanut profile board" and the optimum digging date is determined by the arrangement of pods in the various color groups.

A pocketknife is commonly used to scrape the pods, but this method can be very time consuming. The peanut pod-blaster machine is, again, available at the West Florida

Research and Education Center in Allentown. This machine uses a wet sandblasting technique to quickly remove the outer layer of the peanut hulls.

Harvest time is a busy time; to avoid long delays at the Research Center call a day in advance. Samples will be accepted from 7:00 am to 3:00 pm.

To make an appointment call Greg at 336-7956 or LINK Radio #: 27621\*4. Greg must be available to operate the machine.

**When To Sample:** Each field should be sampled at approximately 115-125 days after planting (110-120 days for Virginia Type). If needed, sample a second time before the predicted digging date to determine if maturity is proceeding normally.

**How To Sample:** Collect a sample by selecting at least 5 spots in the field. Avoid skips, wet spots, etc. Dig up 3 adjacent plants in each spot. Carefully separate the center plant and remove from it all pods match-head size and larger and place in a plastic bag. Collect at least 180, but not more than 220 pods. In fields larger than 50 acres, it is best to collect more than one sample. Different varieties and planting dates a week or more apart in the same field should be sampled separately.

Label each sample bag, seal it and take to the Research Center. Be sure not to let the sample get too hot or dry out.

It only takes a couple to minutes to process a sample. Once the sample is processed the technician can show you how to place the peanuts on a color profile board and determine the optimum maturity date for the field. He will be available to show you how to profile your samples but will not do them all for you. Everyone who uses the machine and profile board at the Research Center will be expected to clean up their own mess.

We encourage you to take advantage of this pod blaster machine. The hull scrape is a proven method of determining peanut maturity, and we feel its use will put money in your pockets by showing you the optimum time to dig.

Greg will be available to operate the pod-blaster machine on Tuesday and Thursday. He will operate the machine on other days as his schedule permits.

The use of trade name in this publication is solely for the purpose of providing specific information. It is not a guarantee, warranty, or endorsement of the product names and does not signify that they are approved to the exclusion of others.

Sincerely,

Mike Donahoe  
County Director  
Santa Rosa County

John D. Atkins  
Extension Agent  
Santa Rosa County